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Stone, Clay, Glass, and Concrete Products Industry Indexes

October 2001

This report analyzes and explains the U.S. Geological Survey's (USGS) monthly leading and coincident indexes for the stone, clay, glass, and concrete products industry, SIC 32. Under the North American Industry Classification System (NAICS) this industry is referred to as nonmetallic mineral products, NAICS 327. This industry processes certain industrial minerals, minerals that are neither metals nor fuels, into useful products. More than 50 percent of the total value of these products is shipped to the highly cyclical construction industry. The indexes have been computed for each month back to 1948 and are available on the World Wide Web at:
http://minerals.usgs.gov/minerals/pubs/imii/scghist.txt

Analysis

Economic effects of the terrorist attacks on September 11 are beginning to appear in the stone, clay, glass, and concrete products leading index for September. In September, the leading index dropped 0.8% to 183.0 from a revised 184.5 in August, and its 6-month smoothed growth rate decreased to 5.5% from a revised 8.3% in August. While this is a large 1-month decline in the growth rate, it should be noted that the growth rate has fallen from 10.8% in June, indicating that the growth slowdown in the leading index had already begun. The 6-month smoothed growth rate is a compound annual rate that measures the near-term trend. A growth rate above +1.0% is usually a signal of growth in future industry activity.[1] The upward trend in the leading index growth rate that began last January appears to have halted in June and could be pulled down further by more declining economic activity. Growth in stone, clay, glass, and concrete products activity will likely be stunted over the next few months.

Two of the leading index's four components decreased in September. The S&P stock price index for building materials companies made the largest negative contribution, -1.8 percentage points, to the net decline in the leading index. New U.S. housing permits contributed -0.3 percentage points. In contrast, average weekly hours worked in the stone, clay, glass, and concrete products industry contributed 0.7 percentage points, and the yield spread between the U.S. 10-year Treasury bond rate and the Federal Reserve's federal funds rate contributed 0.4 percentage points to the leading index (table 2).

Current industry activity, as measured by the coincident index, increased 1.1% in September, and its 6-month smoothed growth rate rose to 0.7% from a revised -1.6% in August. This nonmetallic minerals products coincident index is itself a leading indicator of the U.S. economy. It leads the U.S. business cycle an average of 3.6 months at both peaks (end of an economic expansion) and troughs (end of an economic downturn). It leads at 67% of the turning points from 1948 onward (chart 5).

Explanation

The USGS uses the same methodology for the stone, clay, glass, and concrete products indexes that it uses for the metal manufacturing indexes in the *Metal Industry Indicators*. This methodology consists of constructing and tracking, each month, two composite indexes of diverse economic indicators. The composite leading index for stone, clay, glass, and concrete products signals, several months in advance, major changes in current economic activity as measured by a composite coincident index. The construction of the leading and coincident indexes follows well-established procedures for the analysis of cyclical indicators that were developed at the National Bureau of Economic Research, the U.S. Department of Commerce, and the Center for International Business Cycle Research.

Coincident indicators

The indicators selected to represent current activity in the coincident index for the stone, clay, glass, and concrete products industry are industrial production, the value of shipments in 1982 dollars, and total employee hours worked. The stone, clay, glass, and concrete products coincident index begins to reflect the NAICS classification starting in 1997 because of the switch from the SIC to the NAICS for shipments, while the index for earlier years follows the SIC. Hence, the coincident index from 1997 forward is not entirely consistent with that of earlier years because of small changes in the way some industrial mineral shipments are now classified.

Leading indicators

Leading indicators represent various economic activities that can point to near-term changes in industry activity. The following

[1]The 6-month smoothed growth rate is a compound annual rate based on the ratio of the current month's index to its average level during the preceding 12 months.

four indicators proved to be reliable at signaling major changes in economic activity in the stone, clay, glass, and concrete products industry: 1) average weekly hours worked in the stone, clay, glass, and concrete products industry; 2) an index of new private housing units authorized by building permits in the United States; 3) the Standard & Poor's stock price index for building materials companies; and 4) the yield spread between the 10-year Treasury bond interest rate and the federal funds interest rate. The leading index is not affected by the introduction of the NAICS. The composite leading index constructed from these indicators turned before the coincident index at every trough and at 94% of the peaks. Although the leading index did not lead the coincident index at every peak, the average leads at troughs and peaks were 6.8 and 9.9 months, respectively, for an overall lead of 8.3 months.

This report was produced at the U.S. Geological Survey (USGS) by the Minerals Information Team. For more information about these indexes, contact Gail James (703-648-4915), e-mail (gjames@usgs.gov); or Ken Beckman (703-648-4916), e-mail (kbeckman@usgs.gov).

The USGS also publishes *Mineral Industry Surveys* (MIS) for virtually all industrial minerals important to the U.S. economy. These include MIS for Cement, Clays, Crushed Stone, Dimension Stone, and Construction Sand and Gravel. Information on how to access these reports is available on the World Wide Web at: http://minerals.usgs.gov/minerals/pubs

Tables and charts follow.

Table 1.
The Stone, Clay, Glass, and Concrete Products Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
October	169.7	-7.1	154.8	1.6
November	171.2	-4.5	152.3	-1.7
December	171.0	-3.8	150.0	-4.4
2001				
January	176.7	3.0	152.1	-1.5
February	176.3	3.0	151.5	-2.1
March	179.0	5.9	153.0	-0.2
April	179.2	5.8	152.1	-1.1
May	183.1	9.9	154.2r	1.6
June	184.6	10.8	152.6r	-0.5r
July	185.5	10.6	153.0r	0.0r
August	184.5r	8.3r	151.5r	-1.6r
September	183.0	5.5	153.2	0.7

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 2.
The Contribution of Each Stone, Clay, Glass, and Concrete Products Index Component to the Percent Change in the Index from the Previous Month

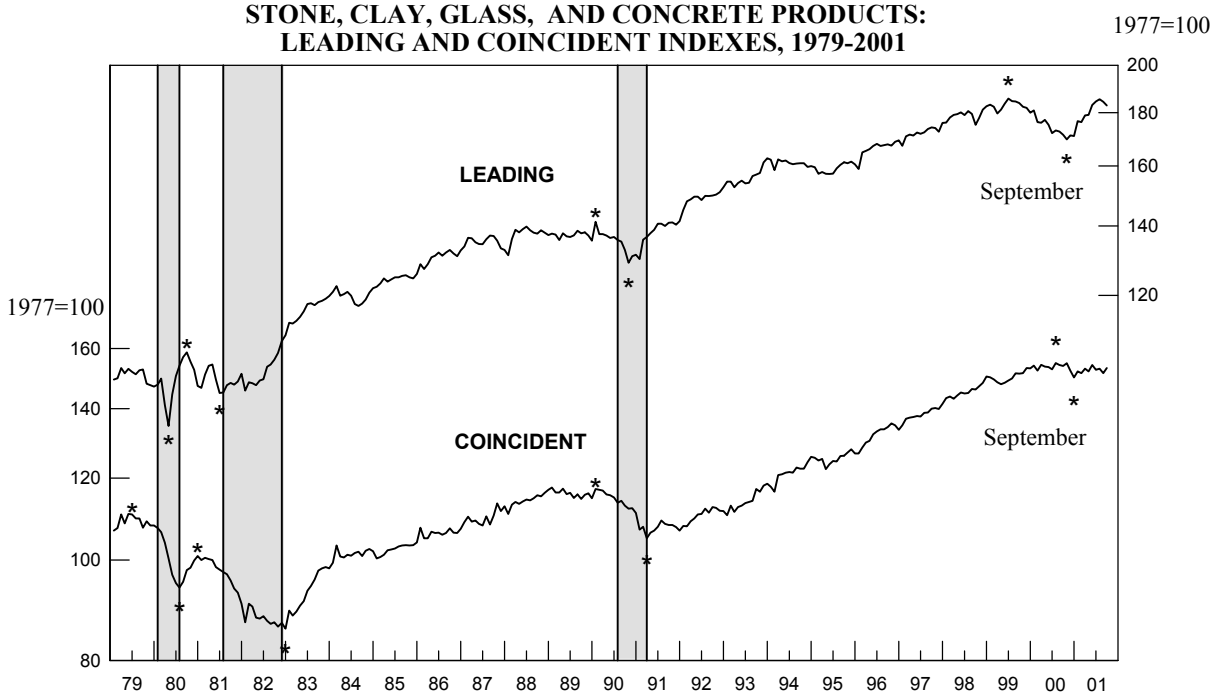
Leading Index	**August**	**September**
1. Average weekly hours, stone, clay, glass, and concrete products (SIC 32)	-0.7	0.7
2. Index of new private housing units authorized by permits	0.0r	-0.3
3. S&P stock price index, building materials companies	0.2	-1.8
4. Spread between the U.S. 10-year Treasury Note and the federal funds rate	-0.2	0.4
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.6r	-0.9
Coincident Index		
1. Industrial production index, stone, clay, glass, and concrete products (SIC 32)	-0.1r	0.1
2. Total employee hours, stone, clay, glass, and concrete products (SIC32)	-1.0r	0.9
3. Shipments of stone, clay, glass, and concrete products (nonmetallic mineral products NAICS 327)	0.1	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.9r	1.1

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, Federal Reserve Board, Conference Board, and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey. All series are seasonally adjusted, except 3 of the leading index.

NA: Not available **r:** Revised

Chart 1.

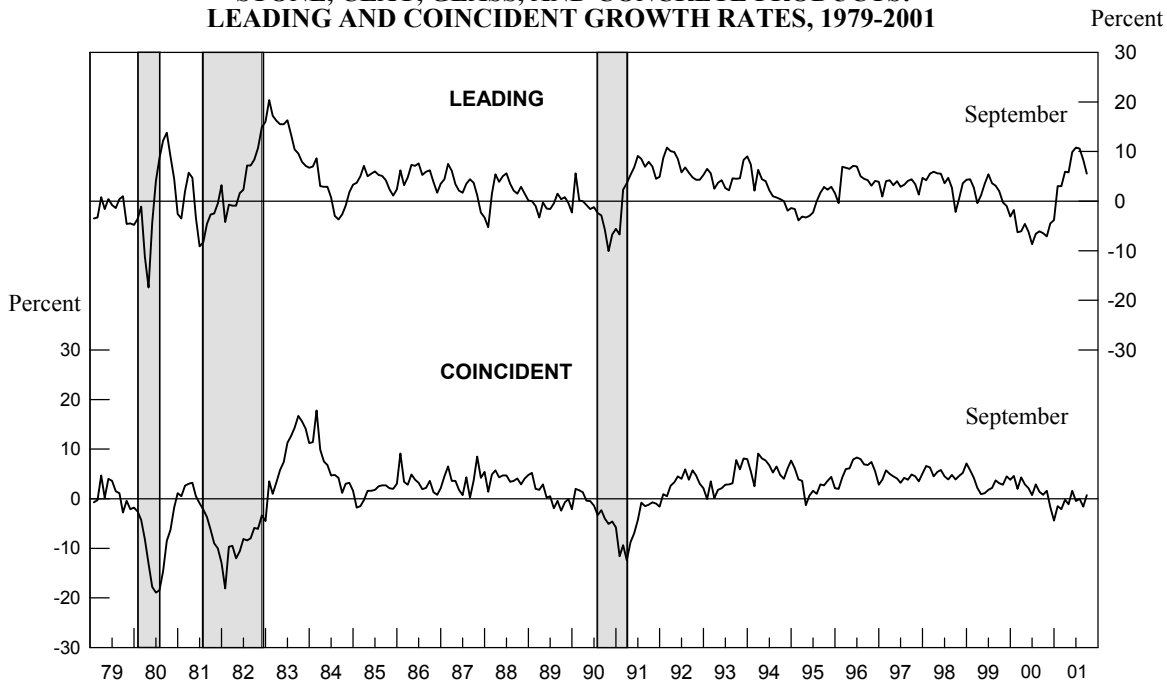
STONE, CLAY, GLASS, AND CONCRETE PRODUCTS: LEADING AND COINCIDENT INDEXES, 1979-2001



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes. More than 50% of the value of shipments of stone, clay, glass, and concrete products is used in the construction industry.

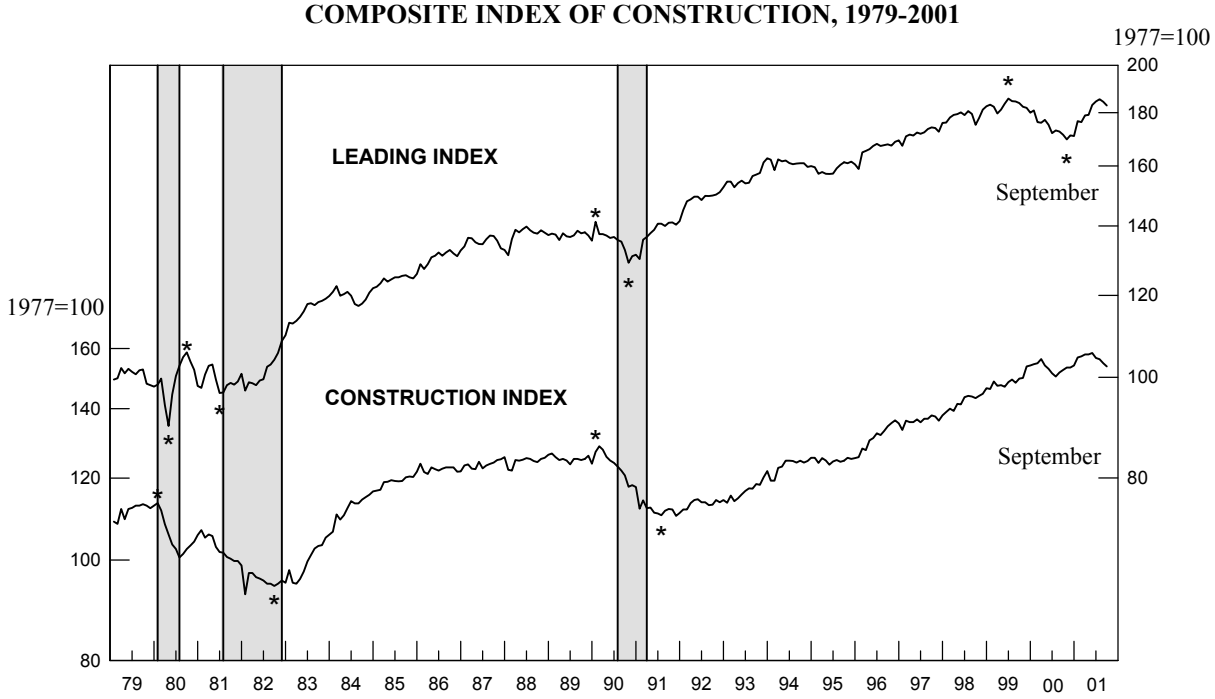
Chart 2.

STONE, CLAY, GLASS, AND CONCRETE PRODUCTS: LEADING AND COINCIDENT GROWTH RATES, 1979-2001



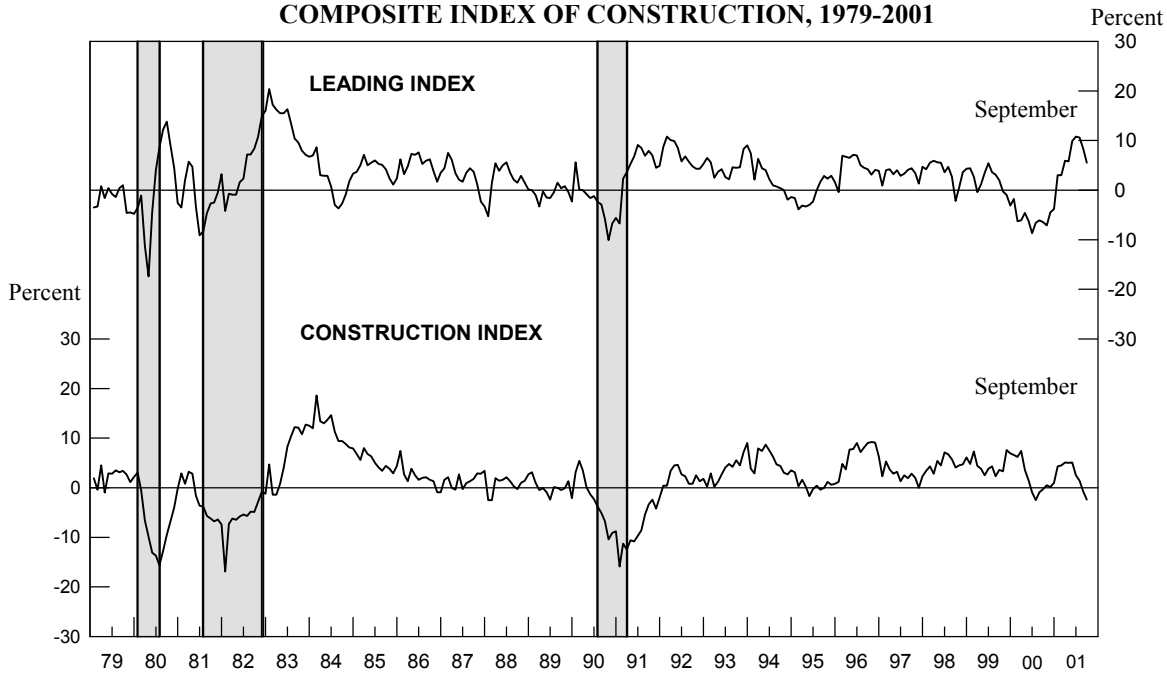
Shaded areas are business cycle recessions. The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Chart 3.
STONE, CLAY, GLASS, AND CONCRETE PRODUCTS LEADING INDEX and COMPOSITE INDEX OF CONSTRUCTION, 1979-2001



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes. More than 50% of the value of shipments of stone, clay, glass, and concrete products is used in new construction. The composite index of construction combines the value of new construction put in place and total employee hours worked in construction.
Sources: U.S. Geological Survey, Bureau of Labor Statistics, and U.S. Census Bureau.

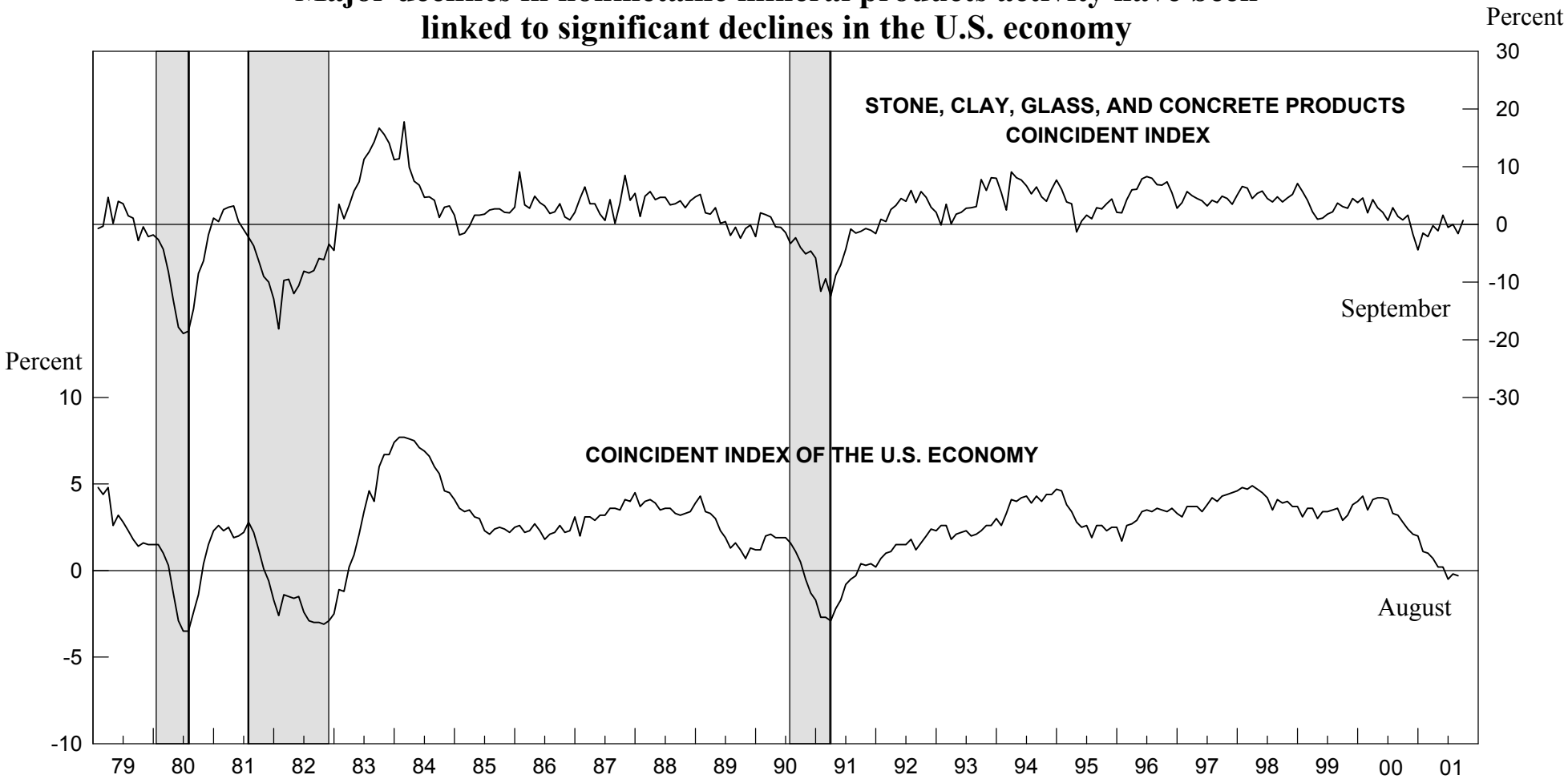
Chart 4.
GROWTH RATES
STONE, CLAY, GLASS, AND CONCRETE PRODUCTS LEADING INDEX and COMPOSITE INDEX OF CONSTRUCTION, 1979-2001



Shaded areas are business cycle recessions. The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Chart 5.

Major declines in nonmetallic mineral products activity have been linked to significant declines in the U.S. economy



Shaded areas are business cycle recessions. The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Sources: U.S. Geological Survey and Conference Board